REMARKS

Reconsideration is requested.

The Abstract has been corrected in response to the Examiner's objection.

The related application section has been updated to identify the patent number for Application Serial No. 09/502,764, as further requested by the Examiner.

Claims 253-278 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,130,602, and claims 1-25 of U.S. Patent No. 6,721,289. Enclosed herewith is a Terminal Disclaimer which obviates the rejection.

Claims 253-256 and 268-273 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,640,151 to Reis in view of U.S. Patent No. 5,568,512 to Rotzoll or U.S. Patent No. 5,355,513 to Clarke, and further in view of U.S. Patent No. 5,128,938 to Borras.

Claim 253, as amended, recites a radio frequency communications device comprising an integrated circuit including a transmitter and a receiver, the integrated circuit being configured to periodically check if a radio frequency signal is being received by the receiver, the integrated circuit further including a timer configured to set a programmable time period for the checking, the timer being programmable by RF command from a remote interrogator to a user selectable value, the transmitter being configured to use a clock signal having a frequency recovered from the received signal, the integrated circuit being

configured to switch between a sleep mode, having a first power level, a receiver-on mode, having a second power level greater than the first power level, and a third mode, having a third power level greater than the second power level.

The Rotzoll reference is not available as prior art under 35 U.S.C. §103(c). 35 U.S.C. §103(c) states that "Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person." The present application was filed after November 29, 1999, but claims priority from U.S. Patent Application Serial No. 08/705,043, filed on August 29, 1996. Rotzoll was filed on Oct. 22, 1996. Applicants' attorney hereby states that the application and the reference were, at the time the invention was made, owned by, or subject to an obligation of assignment to, the same organization. More particularly, at the time the invention was made, both applications were assigned to Micron Communications, Inc. of Boise, Idaho. Therefore, the Rotzoll reference is not properly citable.

The Reis et al. reference fails to teach or suggest an integrated circuit configured to switch between a sleep mode, having a first power level, a receiver-on mode, having a second power level greater than the first power level, and a third mode, having a third power level greater than the second

power level, in combination with the other limitations of the claim. Instead, the Reis et al. reference teaches (col. 12, line 24 et seq.) a tag 8 having two modes of operation, a sleep mode (line 25) during which the RF circuitry is periodically powered (lines 38-40) and a normal power mode (lines 40-43). Reis et al. teach (lines 43 and 44) that "If no wake-up signal is detected, the tag 8 remains in the sleep state."

The Clarke et al. reference and Borras reference fail to cure this deficiency. More particularly, Clarke et al. teach (col. 6, line 28 et seq.) that "Once the control logic has recognized the wake-up signal, continuous power is supplied to all circuits in the transponder." Clarke et al. teach (col. 4, lines 14-32) a first mode of operation (the "semi-active state") in which the PLL formed by the receiver 28, the divide by N counter 38 and other component including a VCO 132 form a phase-locked loop. Once the PLL is properly locked, the transmitter is enabled and transmits a reply signal.

Similarly, Borras teaches a two-state system, with a first, "sleep" state in which power is decoupled from most circuitry and in which a reduced clock frequency is employed. The second state is a microprocessor-ON state in which all circuitry is powered (col. 5, lines 15-25). Therefore, no combination of the references would produce the three states claimed.

Further, it would not be obvious to combine the Clarke et al. reference with the Reis et al. reference because there is no teaching in the references which would suggest their combination.

It would not be obvious to substitute a portion of the structure of Clarke et al. for portions of the structure of Reis et al. because there is no teaching in the references themselves of how the components should be combined or of which components of Clarke et al. should be selected and combined with which components of Reis et al. There are no teachings in the references themselves which teach that there would be any advantage resulting from selecting portions of the structure of Clarke et al. and integrating that structure somehow into the structure of Reis et al.

It would not be obvious to substitute a portion of the structure of Borras for portions of the structure of a combination of Reis et al. with Clarke et al. because there is no teaching in the references themselves of how the components should be combined or of which components of Borras should be selected and combined with which components of a combination of Reis et al. with Clarke et al. There are no teachings in the references themselves which teach that there would be any advantage resulting from selecting portions of the structure of Borras and integrating that structure somehow into the structure of a combination of Reis et al. with Clarke et al.

Even if the structures of the references could possibly be somehow modified to result in the claimed structure, that does not render the claimed structure obvious unless the references themselves suggest the desirability of the modification. Evidence of a suggestion to combine may flow from the prior art references themselves, from the knowledge of one skilled in the art, or from the nature of the problem to be solved. However, this range of sources does not

diminish the requirement for actual evidence. Further, the showing must be clear and particular. No such clear and particular evidence is available here. Therefore, the combination of reference is improper.

Therefore, claim 253 is allowable.

As claims 254-256 depend on claim 253, they too are allowable.

Claim 268 recites a radio frequency identification device comprising a radio receiver having an output and a control input; a microprocessor having a data input coupled to the radio receiver output and having a control input; a timer having an output coupled to the control input of the radio receiver, the timer being configured to provide an output signal to the radio receiver control input changing a state of the identification device from a first mode to a second mode by turning on the radio receiver in the identification device in response to a first criterion, the timer being programmable by RF command from a remote interrogator to a user selectable value; and a wake up controller circuit including an output coupled to the microprocessor control input, the wake up controller circuit being configured to change the state of the identification device from the second mode to a third mode in response to a second criterion, the wake up controller circuit providing an output signal to the microprocessor control input changing the state of the identification device from the third mode to a fourth mode in response to a third criterion.

The Rotzoll reference is not available as prior art, as discussed above, because, at the time the invention was made, both applications were commonly assigned.

The Reis et al. reference fails to teach or suggest a wake up controller circuit being configured to change the state of the identification device from a second mode to a third mode in response to a second criterion, the wake up controller circuit providing an output signal to a microprocessor control input changing the state of the identification device from the third mode to a fourth mode in response to a third criterion, in combination with the other elements of the claim.

Instead, the Reis et al. reference teaches (col. 12, line 24 et seq.) a tag 8 having only two modes of operation, a sleep mode (line 25) during which the RF circuitry is periodically powered (lines 38-40) and a normal power mode (lines 40-43). Reis et al. teach (lines 43 and 44) that "If no wake-up signal is detected, the tag 8 remains in the sleep state."

The Clarke et al. reference and Borras reference fail to cure this deficiency. More particularly, Clarke et al. teach (col. 6, line 28 et seq.) that "Once the control logic has recognized the wake-up signal, continuous power is supplied to all circuits in the transponder." Clarke et al. teach (col. 4, lines 14-32) a first mode of operation (the "semi-active state") in which the PLL formed by the receiver 28, the divide by N counter 38 and other component including a VCO 132 form a phase-locked loop. Once the PLL is properly locked, the transmitter is enabled and transmits a reply signal.

Similarly, Borras teaches a two-state system, with a first, "sleep" state in which power is decoupled from most circuitry and in which a reduced clock frequency is employed. The second state is a microprocessor-ON state in which

all circuitry is powered (col. 5, lines 15-25). Therefore, no combination of the references would produce the three states claimed.

Further, it would not be obvious to combine the Clarke et al. reference with the Reis et al. reference because there is no teaching in the references which would suggest their combination. It would not be obvious to combine a combination of those references with the Borras reference for reasons provided above.

Therefore, claim 268 is allowable.

As claims 269-270 depend on claim 268, they too are allowable.

Claim 271 recites a radio frequency communications device, comprising a transmitter; a receiver; a first circuit configured to check, from time to time, if a radio frequency signal is being received by the receiver; a timer configured to set a time period for the checking, the timer having a frequency locked loop including a current controlled oscillator, the frequency locked loop being configured to recover a clock frequency from the received signal to provide a recovered clock signal in response to the first circuit determining that a signal is being received and to supply the recovered clock signal to the transmitter; and a variable value divider coupled to the output of the frequency locked loop, the value of the divider being programmable to a user selectable value in response to a radio frequency command received by the receiver so as to program the time period of the checking.

Claim 271 is allowable because the combination of references is improper.

No evidence has been provided of a suggestion to combine. Evidence of a suggestion to combine may flow from the prior art references themselves, from the knowledge of one skilled in the art, or from the nature of the problem to be solved. However, this range of sources does not diminish the requirement for actual evidence. Further, the showing must be clear and particular. No such clear and particular evidence is available here. Therefore, the combination of reference is improper.

Therefore, claim 271 is allowable. As claim 272 depends on claim 271, claim 272 is also allowable.

Claim 273 recites a method for conserving power in a radio frequency identification device including a microprocessor and receiver, the method comprising switching the single integrated circuit from a sleep mode to a receiver on mode based on a timer interval that is programmable by RF command from a remote interrogator to a user selectable value and performing the following tests to determine whether to further switch to a microprocessor on mode because a valid radio frequency signal is present: (a) determining if any radio frequency signal is present and, if so, proceeding to step (b); (b) determining if the radio frequency signal is modulated and has a predetermined number of transitions per a first predetermined period of time and, if so, proceeding to step (c); and (c) determining if the modulated radio frequency signal has a predetermined number of transitions per a second predetermined period of time different from the first predetermined time, and, if so, switching from the receiver on mode to the microprocessor on mode.

The Reis et al. reference fails to teach or suggest a method including switching from a sleep mode to a receiver-on mode, and performing tests to determine whether to further switch to a microprocessor-on mode (three modes), in combination with the other elements of the claim.

Instead, the Reis et al. reference teaches (col. 12, line 24 et seq.) a tag 8 having only two modes of operation, a sleep mode (line 25) during which the RF circuitry is periodically powered (lines 38-40) and a normal power mode (lines 40-43). Reis et al. teach (lines 43 and 44) that "If no wake-up signal is detected, the tag 8 remains in the sleep state."

The Clarke et al. reference and Borras reference fail to cure this deficiency. More particularly, Clarke et al. teach (col. 6, line 28 et seq.) that "Once the control logic has recognized the wake-up signal, continuous power is supplied to all circuits in the transponder." Clarke et al. teach (col. 4, lines 14-32) a first mode of operation (the "semi-active state") in which the PLL formed by the receiver 28, the divide by N counter 38 and other component including a VCO 132 form a phase-locked loop. Once the PLL is properly locked, the transmitter is enabled and transmits a reply signal.

Similarly, Borras teaches a two-state system, with a first, "sleep" state in which power is decoupled from most circuitry and in which a reduced clock frequency is employed. The second state is a microprocessor-ON state in which all circuitry is powered (col. 5, lines 15-25). Therefore, no combination of the references would produce the three states claimed.

Further, the combination of references is improper for the reasons provided above.

Therefore, claim 273 is allowable. As claim 274 depends on claim 273, it too is allowable.

In view of the foregoing, allowance of claims 253-278 is requested. The undersigned is available for telephone consultation at any time.

Respectfully submitted,

Dated: Dec, 23, 2005 By: D. Malhotra

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